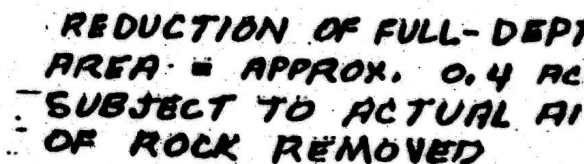


TO HAZARD... 374 + 1/2 LIME HERE



Site: LITTON
ID #: MOB07152965
Break: 11.6
Other: LITTON
1208

NOTE: TOTAL VOLUME OF LIQUID $\approx 12 \times 10^6$ GALLONS

3/82

O. H.

als Co.

Emergency Restoration

Environmental Restoration

FILE
HABROPOSS
WASTE
MANAGE

Regional Offices
Ottawa, Illinois
Atlanta, Georgia
Washington, D.C.

P.O. Box 651
Findlay, Ohio 45840
Telephone (419) 423-3526
1-800-537-9542

January 26, 1982

Mr. George Copeland
Facilities Manager
Litton Advanced Circuitry
4811 West Kearney
Springfield, MO 65803

Dear Mr. Copeland:

For this project, we recommend using our Sharples P 5000 Horizontal Super-D Canter as the most cost-effective method of disposing of the pond's sludge contents.

Laboratory tests on samples provided by Litton indicated that the original material containing 10% solids (1 part solid - 9 parts water) could be readily centrifuged. Centrifugation resulted in products containing 50% solids (1 part solid - 1 part water) and a clear supernatant liquid (8 parts water).

Based on past experience, this 50% solid material plus 25% fly ash, or lime, should easily meet landfill requirements for a solid material.

Based on your estimate of 1800 cubic yards, we would pump sludge from the bottom of the lagoon at 80 gallons per minute. We would operate 12 hours per day, with the centrifuge on line 10 hours per day, and complete the pond pump out in about 12 days.

Assuming no further treatment of the supernatant liquid is called for, the liquid would be sent to sewer. The solids would be mixed with 25% fly ash, by weight, (or lime) and loaded into a lined and sealed truck, provided by others, for transportation to the disposal site. All of the above would be done by personnel wearing suitable protective equipment.

This project would take an additional five days for mobilization set up, decontamination, and demobilization, of equipment.

O. H. Materials Co.

Emergency Response and Environmental Restoration

Regional Offices
Ottawa, Illinois
Atlanta, Georgia
Washington, D.C.

P.O. Box 651
Findlay, Ohio 45840
Telephone (419) 423-3526
1-800-537-9540

April 5, 1982

Mr. George Copeland
Litton Industries
4811 W. Kearney
Springfield, MO 65803

Dear Mr. Copeland:

In response to your questions, OHM is pleased to provide the following information to describe the normal steps for centrifugation and disposal of waste:

1.0 Characterization and Treatment of Waste

- 1.1 Determine applicability of centrifuge to concentrate waste (laboratory and pilot plant testing).
- 1.2 Contact landfills to determine acceptable form of waste for disposal (percentage of moisture limits, etc.)
- 1.3 Assess water quality discharge criteria and determine disposition of liquid waste.
 - 1.3.1 Design additional water treatment, if required.

2.0 Site Assessment

- 2.1 Survey available work areas and plan equipment locations and traffic flow.
- 2.2 Determine most cost effective power supply.
- 2.3 Plan for secure holding of concentrated waste prior to disposal.
- 2.4 Finalize treatment and disposition of centrifuge water.
 - 2.4.1 Determine analytical and sampling requirements.
- 2.5 Finalize methods of extracting sludge from lagoon (or other) to centrifuge.
- 2.6 Survey available services and/or equipment from customer and interface.

3.0 Mobilization and Setup

- 3.1 Mobilize equipment to customer's site.
- 3.2 Set up equipment according to previous planning. The following process steps outlined in Figure 1 are included as required.

- 3.3 Set up waste holding areas, if needed.
- 3.4 Finalize disposal arrangements.
- 3.5 Set up analytical and sampling programs

4.0 Operation

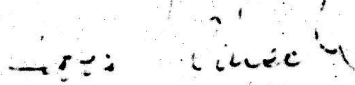
- 4.1 After optimizing all process steps, start continuous operation.
- 4.2 Solid waste to be removed from site as soon as possible to minimize storage.
- 4.3 Sample and analyze water from centrifuge as required.
- 4.4 Final scraping of lagoon with equipment as required.

5.0 Teardown and Cleanup

- 5.1 Remove equipment from customer's site.
- 5.2 Restore site as required.

Please contact me or John Copus if additional information is needed.

Very truly yours,


Robert J. Ohneck
Director, Project Engineering

RJO:sg

cc: #100.261

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APR 7 1982

I.D. NO.
MCD007152703

Mr. James K. Dow
 Director Technical Services
 Litton Advanced Circuitry
 P.O. Box 2847, Commercial Station
 Springfield, Missouri 65803

Dear Mr. Dow:

We have reviewed the closure plan submitted on March 17, 1982, for closure of the surface impoundment at the Springfield, Missouri facility. Closure of interim status hazardous waste management facilities is to be conducted in accordance with requirements contained in the July 1, 1981, 40 Code of Federal Regulations (CFR), Part 265, Subpart G, Closure and Post-Closure. Review of the closure plan resulted in the following comments:

1. In light of the recently issued Emergency Resource Conservation and Recovery Act (RCRA) permit and the corresponding remedial action, the closure plan should be revised to reflect the impact of this activity upon final closure of the facility.
2. The closure plan should describe hazardous waste management activities at the site and the steps necessary to close the facility. Therefore, the closure plan should contain a general information section describing the facility size, volume of impoundment, type of treatment and dredging operations.
3. The closure plan must include an estimate of the maximum inventory of waste in the storage surface impoundment at any given time during the life of the facility.
4. A schedule for final closure should be included in the closure plan. For surface impoundments in which wastes are removed at closure, the schedule of final closure activities should include:

- a. Final date for accepting wastes in surface impoundment;
- b. Date all treatment is completed;
- c. Date that all standing liquids will have been removed;
- d. Date that all sludge will have been removed;

*Rice -
 per conversation
 with Wagoner*

ARWM/WMBR-PMTS;KF1ournoy;pc:x6531:3-31-82;Disk C

RG 4D 82-146

CONCURRENCES							
SYMBOL	PMTS	PMTS	PMTS	WMBR	ARWM	ARWM	RGAD
	Fleurnoy	Dehner	Harrington	McFadyen	Spratlin	Wagoner	
SURNAME	KAF						
DATE	4-1-82		4-1-82	4/2/82		4/7/82	

- e. Final date facility is decontaminated;
- f. Final date of closure, date that closure has been certified by professional engineer;
- g. Total time required to close the facility;
- h. Justification if closure will take longer than six months from the date of final acceptance of wastes.

5. Since all standing liquids will be discharged to the publicly owned treatment works (POTW), Litton must comply with the Clean Water Act. Upon removing the sludge from the surface impoundment, Litton will become a generator of hazardous waste and must manage it in accordance with applicable portions of Parts 262, 263 and 265 of the July 1, 1981, CFR.

Will the sludge be tested to determine if it is a hazardous waste?

6. The closure plan should include a description of procedures for decontaminating equipment, soil and cleaning wastes and residues.

7. The closure plan must include provisions for groundwater monitoring throughout the closure period until certification. Groundwater monitoring shall be in accordance with requirements contained in Section 265.90 of the regulations referenced above. The closure plan should include a copy of the groundwater sampling and analysis plan.

8. When closure is complete, certifications must be submitted from the owner or operator and an independent registered professional engineer certifying that closure was completed in accordance with the approved closure plan. The owner or operator should estimate the number of site inspections and include this information in the closure plan.

We have enclosed a sample closure plan outline and sample closure cost estimating worksheets for your use in revising the closure plan and developing a more detailed closure cost estimate. The cost factors contained in the cost estimating worksheets are for example purposes only.

Any questions regarding the closure plan should be referred to Karen Flournoy of my staff at 816/374-6531.

Sincerely yours,

John J. Franke
Regional Administrator

Enclosures

cc: Paul Meiburger, MDNR

bcc: Michael Sanderson, AWCN



ADVANCED CIRCUITRY

P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751

MOD007152903

March 17, 1982

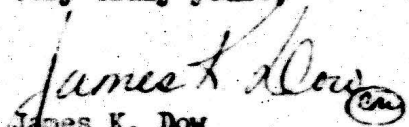
Mr. John Franke, Jr.
Regional Administrator
Environmental Protection Agency
324 E. 11th
Kansas City, Missouri 64106

Mr. Franke:

Enclosed is the specification for the plan closure of Litton's on-site lagoon as required by Section 265.112 "Closure; Amendments of Plan" of the Federal Register.

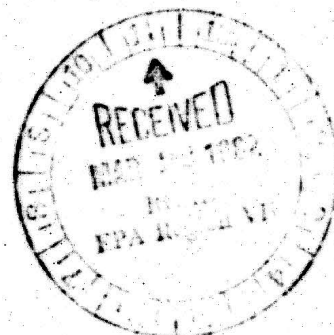
Please review and contact me concerning any modifications that you feel necessary.

Very truly yours,


James K. Dow
Director Technical Services

JKD/cm

Enclosures



265.93 Preparation and Evaluation and Response
See 265.9

265.94 Recordkeeping and Reporting

Subpart G - Closure and Post Closure

265.111 Closure and Post-Closure

A. Owner shall close facility in a manner to minimize all hazards.

265.112 Closure Plan

A. On or about March, 1982, the city sewer system will be available for partial hook-up and Litton will begin use for effluent discharge. At this time, Litton will split its discharge of effluent waters to A-pond and the sewer. At the present percolation rate, allowing for rain, and assuming a drop in the head pressure with the level, percolation will continue for approximately 300 days. This would put the start of disposal at about January 1, 1983. There is a possibility of earlier disposal if the city allows Litton to discharge from "A-pond" to the sewer in an effort to drop its level at a faster rate.

B. Based on calculations approximately 1600 cu. yds. of sludge will have accumulated and will be removed to a hazardous waste site. This material will be removed with heavy equipment and handled per contract by O. H. Materials.

C. Decontamination of equipment will include washdown within the pond itself and dewatering of waste through our filter press. This material will also be shipped via our normal process to the landfill per O. H. Materials.

D. Actual closure will start in January and take approximately two months of excavation and loading time. Final closure will consist of grading over and seeding of the site.

E. In lieu of the above, ACD is investigating methods for rendering the sludge non-hazardous. In the event ACD is successful, we would submit a modified closure plan.

F. This plan must be submitted to the Regional Administrator 180 days before beginning of closure.

265.113 Time Allowed for Closure

- A. Closure is to take place within 90 days of last receipt of wastes.
- B. We may apply to Regional Administrator for longer closure time.

265.114 Disposal or Decontamination of Equipment

- A. All equipment and structures used in closure shall be properly disposed of or decontaminated.

265.115 Certification of Closure

- A. Upon closure, Litton shall submit to the Regional Director certification thereof signed by the operator and a professional registered engineer.

Subpart H - Financial Requirements

265.142 Cost Estimate for Facility Closure

- A. Litton has developed closure costs for facilities of \$200,000 per contract.
- B. Costs to be updated each year using an inflation factor derived from the Annual Implied Price Deflator for GNP.

Subpart K - Surface Impoundments

265.232 General Operating Requirements

- A. Operation of lagoons shall be maintained 2 feet below runover.
- B. All dams, dikes, and walls shall have grass covering.
- C. Operating level shall be recorded daily.
- D. Dikes, walls, and vegetation shall be inspected for leaks, deterioration, or failure weekly.

265.233 Closure

- A. Litton shall remove:
 - 1. Leaking liquids
 - 2. Waste and waste residue
 - 3. Leaking and surrounding contamination soil

J. H. Materials Co.

Emergency Response and Environmental Restoration

Regional Offices:
Ottawa, Illinois
Atlanta, Georgia
Washington, D.C.

P.O. Box 551
Findlay, Ohio 45840
Telephone (419) 423-3526
1-800-537-9540

January 26, 1982

Mr. George Copeland
Facilities Manager
Litton Advanced Circuitry
4811 West Kearney
Springfield, MO 65803

Dear Mr. Copeland:

For this project, we recommend using our Sharples P 5000 Horizontal Super-D Canter as the most cost-effective method of disposing of the pond's sludge contents.

Laboratory tests on samples provided by Litton indicated that the original material containing 10% solids (1 part solid - 9 parts water) could be readily centrifuged. Centrifugation resulted in products containing 50% solids (1 part solid - 1 part water) and a clear supernatant liquid (8 parts water).

Based on past experience, this 50% solid material plus 25% fly ash, or lime, should easily meet landfill requirements for a solid material.

Based on your estimate of 1800 cubic yards, we would pump sludge from the bottom of the lagoon at 30 gallons per minute. We would operate 12 hours per day, with the centrifuge on line 10 hours per day, and complete the pond pump out in about 12 days.

Assuming no further treatment of the supernatant liquid is called for, the liquid would be sent to sewer. The solids would be mixed with 25% fly ash, by weight, (or lime) and loaded into a lined and sealed truck, provided by others, for transportation to the disposal site. All of the above would be done by personnel wearing suitable protective equipment.

This project would take an additional five days for mobilization set up, decontamination, and demobilization of equipment.


Based on the above, we estimate costs as follows:

Equipment	33,992
Personnel	41,416
Disposal - 400 tons of material (25% fly ash) @ \$130/ton (trans. & disp.)	52,000
Fly ash, 76 tons @ \$20/ton	1,500
Miscellaneous Disposables	<u>2,500</u>
	131,408
Contingency at 10%	<u>13,140</u>
	<u>\$144,548</u>

We require a 440 volt 400 amp electrical connection to operate the centrifuge. The 400 amp load is the starting current required to bring the centrifuge up to speed. The running current will be significantly less. If necessary, we, or Litton, can supply a portable electrical generator to operate the centrifuge.

Actual work will be performed on a time and material basis.

Sincerely yours,


John Copus

JC/eb



ADVANCED CIRCUITRY

P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862 0751

April 13, 1982

RECEIVED

APR 15 1982

Mr. John J. Franke
Regional Administrator
U.S. Environmental Protection Agency
Region VII
324 E. 11th
Kansas City, Missouri 64106

CONSTRUCTION GRANTS BRANCH
WATER DIVISION

Dear Mr. Franke:

Please find enclosed our revised closure plan which was originally submitted on March 17, 1982 for closure of our surface impoundment in Springfield, Missouri. This revised plan reflects the necessary steps taken to meet the requirements set forth in the March, 1982 Eminent Hazard Status issued to Advanced Circuitry by the Missouri Department of Natural Resources. It is also felt that our closure plan meets the requirements contained in the July 1, 1981 40 Code of Regulations Part 265, Subpart G, Closure and Post Closure.

In your letter of April 7, 1982, you stated several questions which I will now try to address.

- 1) A general description of our surface impoundment is as follows: Earthen construction 150' long by 150' wide by an average depth of 9' which holds a volume of approximately 12 million gallons of waste water. At this time, our lagoon is holding approximately 9 million gallons of water with the remaining 3 million gallons already being pumped into the Springfield Sewer System or irrigated.
- 2) Please find enclosed a schematic showing our various treatments of plant effluent prior to discharge to 1) city sewer or 2) filter press for sludge removal.
- 3) At this time, our plan for groundwater monitoring is still pending approval by the Missouri Department of Natural Resources.

I would like to point out once again that by our present schedule of closure, the groundwater monitoring system would only be used for approximately 120 days maximum before its use is terminated.

- 4) We currently have hired the consulting firm of Hood-Rich of Springfield, Missouri to oversee our closure operation. It will be this firm who will certify that our closure was completed.

WMMG

APR 17 1982

Region VII K.C., MO

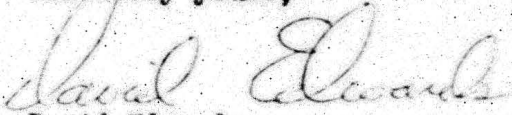
Mr. John J. Franke
April 13, 1982

Page 2

in accordance with our approved closure plan. Currently Hood-Rich is estimating an on-site inspection on a bi-weekly basis.

If you have any questions regarding our closure plan, please contact me at your convenience.

Sincerely yours,



David Edwards
Facilities Manager

cc: Paul Meiburger
Environmental Engineer I
Missouri Dept. of Natural Resources
P.O. Box 1368
Jefferson City, Missouri 65102

Subpart G - Closure and Post Closure

265.111 Closure and Post Closure

- A. Owner shall close facility in a manner to minimize all hazards.

265.112 Closure Plan

- A. In March, 1982, the city sewer system was available for hookup and Litton began its use for effluent discharge. At that time, Litton discontinued discharging effluent waters to A pond. Due to the DNR Eminent Hazardous Action of March, 1982, it is expected that the waste water in A pond may be removed by May 1, 1982. At this time, we will begin closure on approximately May 10, 1982.
- B. Based on calculations, approximately 1800 cubic yards of sludge will have accumulated and will be removed to a hazardous waste site. A plan submitted by the contractor, O.H. Materials Company, has been submitted and is included in this report.
- C. Decontamination of equipment will include wash-down within the pond itself.
- D. Actual closure will start in May, 1982, and will take approximately 2 months of excavation and loading time. Final closure will consist of grading over and seeding of the site.

265.113 Time Allowed for Closure

- A. Closure is to take place within 180 days of last receipt of wastes.
- B. We may apply to Regional Administrator for longer closure time.

265.114 Disposal or Decontamination of Equipment

- A. All the equipment and structures used in the closure shall be properly disposed of or decontaminated by high pressure water spray.

265.115 Certification of Closure

- A. Upon closure, Litton shall submit to the Regional Director certification thereof signed by the operator and an independent professional registered engineer.
- B. Expected certification date is August, 1982.

Subpart H - Financial Requirements

265.112 Cost Estimate for Facility Closure

- A. Litton has developed closure costs for facilities for \$465,000 per contract.

